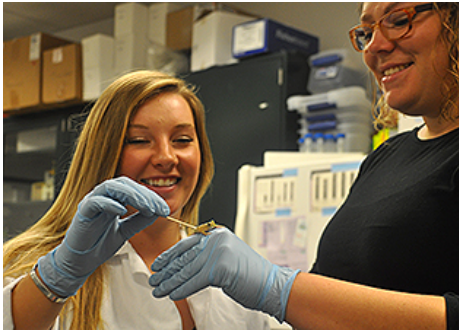


# The University of Tampa Office of Undergraduate Research and Inquiry



## Scaffolding Inquiry Across the Curriculum at the University of Tampa:

### Progress and Lessons Learned

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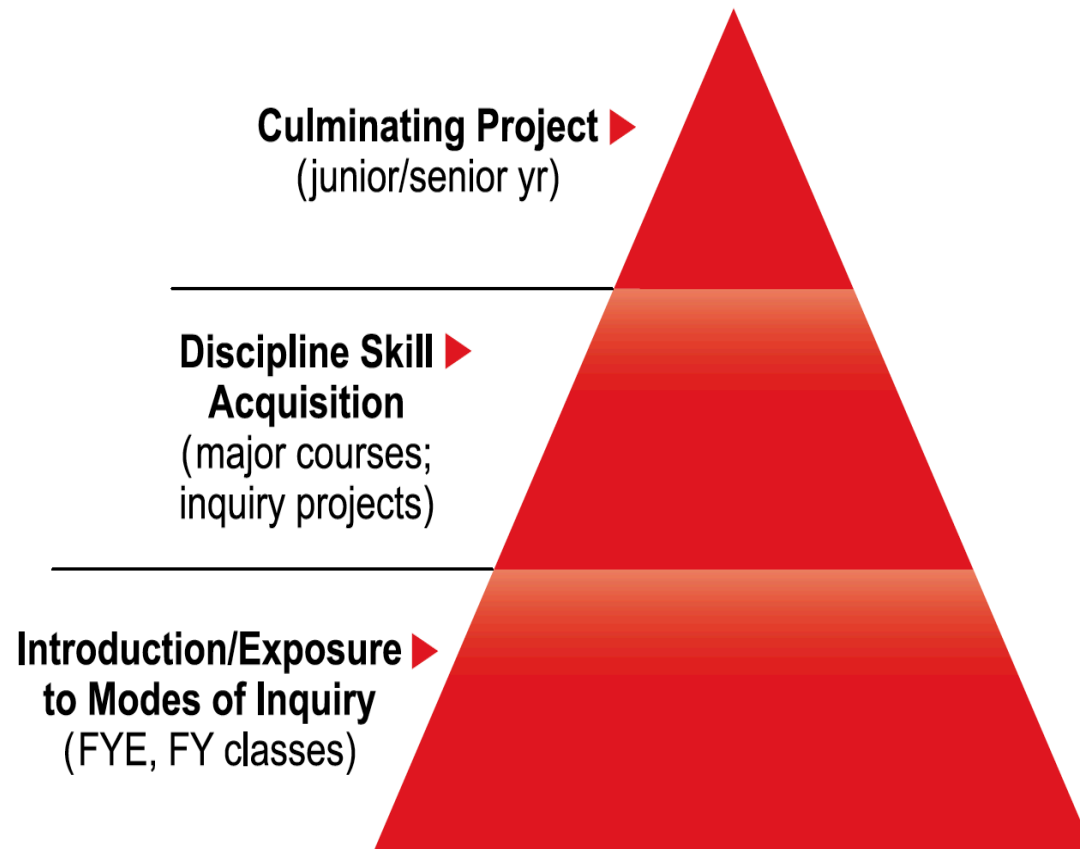
# Learning by Doing: Inquiry-based Experiential Education

- A commitment to experiential education:
  - The University is committed to the development of each student to become a productive and responsible citizen. To this end, the University ensures that **students balance “learning by thinking” with “learning by doing.”**
- Inquiry: seeking for truth, information, or knowledge, or seeking information by questioning and experimenting.



# Learning by Doing: Inquiry-based Experiential Education

A scaffolded approach to creating inquirers



## Program Goals

### **Transform the institution through:**

- Enhancing the awareness, importance, and visibility of scholarship and inquiry at UT by actively promoting and supporting both faculty mentoring and student engagement in these key learning processes.
- Increasing opportunities for student scholarship and creative works by developing more opportunities for faculty-student engagement for intensive mentoring and creative relationships.
- Engaging more students in quality internship experiences through changes in curricular requirements, strengthening of the rigor of internship outcomes, and improved relations with community partners.



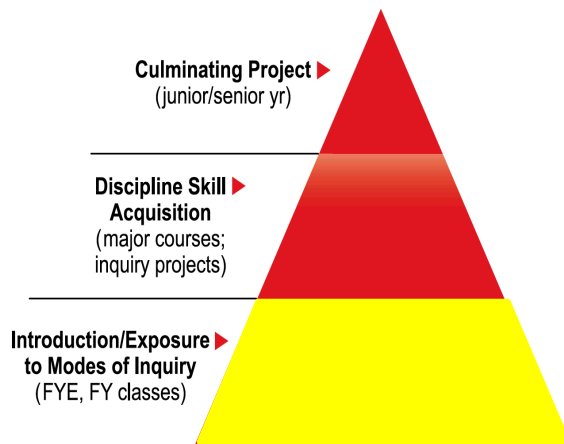
# It isn't a party without SLOs

## Student learning objectives:

- **Improving critical thinking skills** as determined by changes in student approaches and problem solving as measured by external and internal assessment instruments;
- **Improving communication abilities** as determined by improvements in **writing styles** and abilities as measured by qualitative scoring rubrics and national normed tests;
- **Improving communication abilities in public speaking/presentation skills** as measured by qualitative scoring rubrics and national normed tests;
- **Attaining practical skills related to the field of inquiry**, including information/reference searching, quantitative literacy, creative thinking, and problem solving relative to projects and performance standards.



# Inquiry in the First-Year Experience

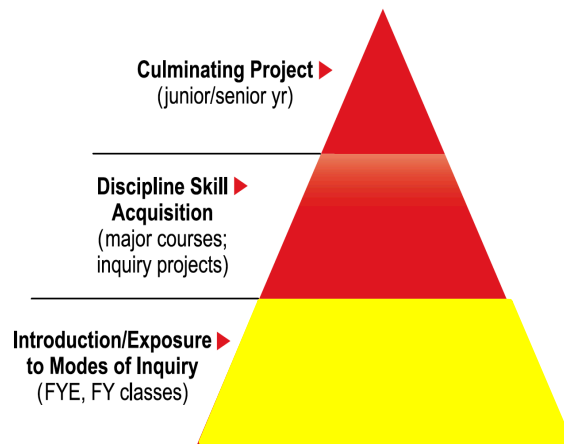


## Logistics:

- Faculty apply to teach sections of 20 students. 1 credit hour course with lots of college transition content.
- Faculty receive a stipend (\$1000).
- Students stay with that instructor for two semesters.
- Students opt-in to Inquiry sections at registration.
- Inquiry sections introduce students to Faculty's area of scholarship.
- Students are introduced to hypothesis generation and problem-framing in the field, as well as tools in that discipline.
- Students complete a group project.



# Inquiry in the First-Year Experience



- 2016-17: 9 Sections (~180 students)
- 2017-18: 29 Sections (~580 students)
- 2018-19: 24 Sections (~480 students)

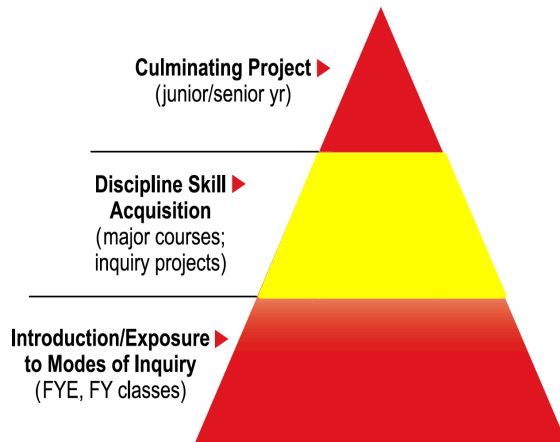
\*Target was 20 courses/ year

## Example titles:

- “Exploring Self-Expression via Freedom of Speech”
- “Conducting Business-Focused Empirical Research”
- “The Scientific Method Applied: What we learn from (Mis)translations in the Popular Press”
- “Scholarship of Game Playing”
- “Working with an Inter-Professional Team”



# Inquiry in the Upper Division: “In the Majors”



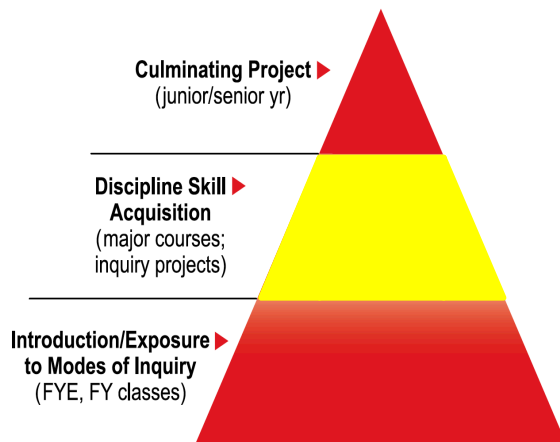
## Logistics:

- Faculty apply to teach an Inquiry-based course.
  - Application is reviewed by the Undergraduate Research and Inquiry Faculty Committee.
  - Course Creation (\$1000): Inquiry-based course.
  - Course Redesign (\$1000): Inquiry-based assignments  $\geq 75\%$  of grade.
  - Significant Assignment (\$600): Inquiry-based assignment  $\geq 35\%$  of grade.
  - Adding Assessments to Inquiry-Based course (\$400).





# Inquiry in the Upper Division: “In the Majors”

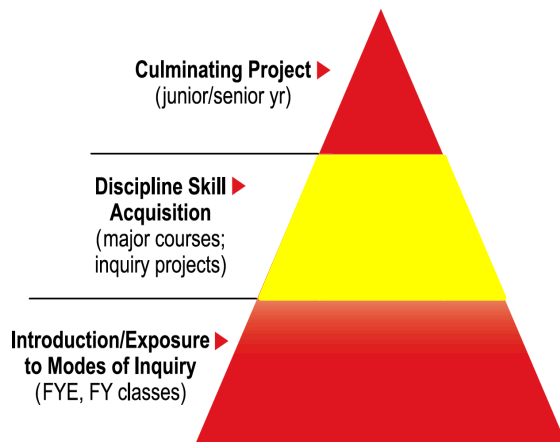


## Students learn about:

- Their faculty member's area of research and current topics of interest;
- Application of practices and methods (including tools and technology) within a discipline, done in a scaffolded approach, in a lab, studio, field or office setting;
- Intermediate level hypothesis and problem-framing processes related to higher level skills related to research and inquiry;
- Performance of an authentic inquiry-based project using acquired skills in response to a hypothesis or inquiry-based problem;
- Communication skills such as report writing; presenting data



# Inquiry in the Upper Division: “In the Majors”



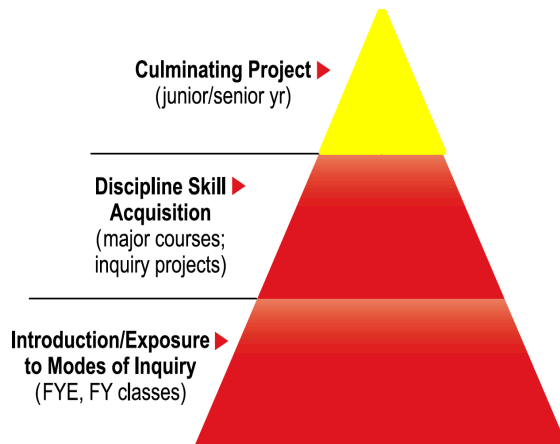
- 2016-17: 0 courses
- 2017-18: 37 courses across 14 majors
- 2018-19: 41 courses across 14 majors

## Snapshot of 17-18 Courses:

- *Type of Course* - 52% adding assessment, 28% new or redesign whole course, 20% significantly changing one assignment
- *Course is part of sequence courses* - 45% yes
- *Pre-req to other courses in major* - 24% yes
- *Required for major* - 59% yes

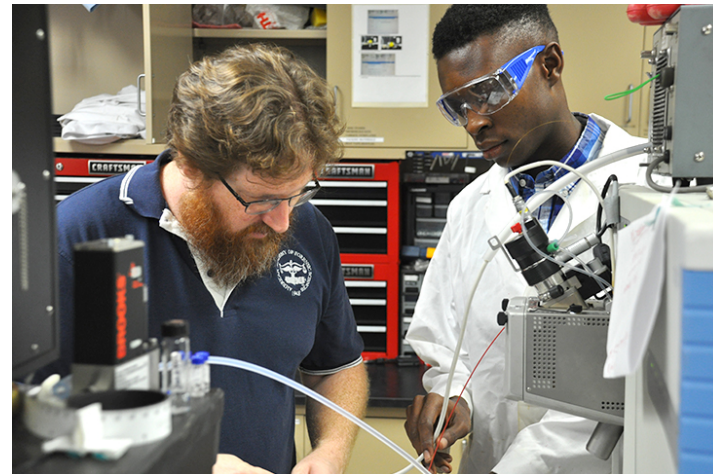


# Culminating Projects

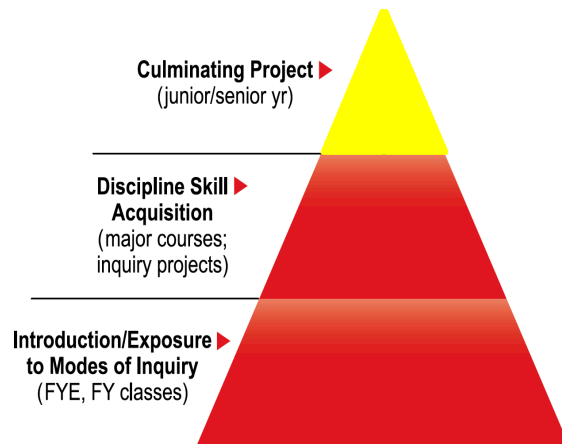


## Logistics:

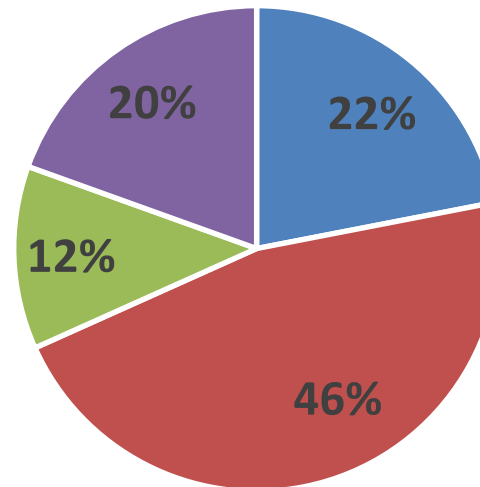
- Traditional faculty-mentored research projects.
- Grants awarded for year-long or summer research.
- Year-long research projects:
  - \$4000 – faculty stipend (\$1000), student stipend (\$1000), \$2000 for supplies or travel to present research.



# Culminating Projects



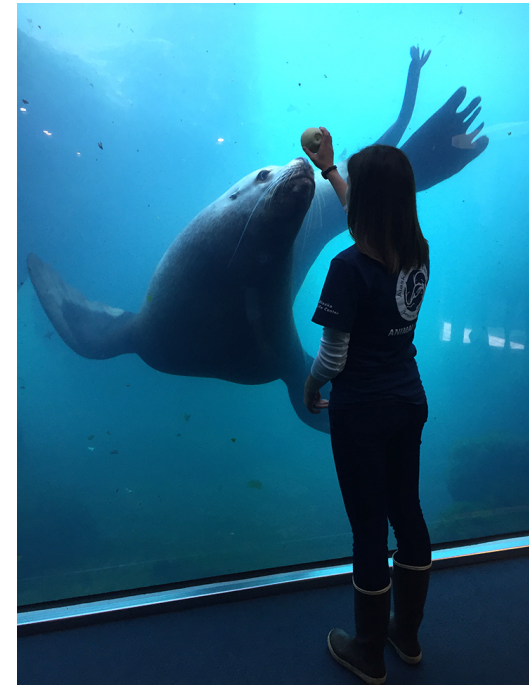
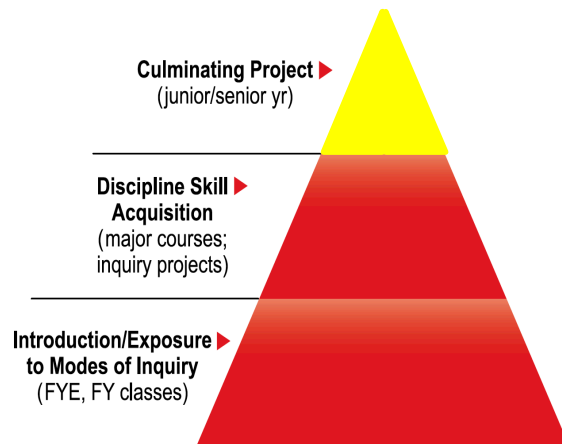
- 2016-17: 0 projects
- 2017-18: 9 projects (pilot year)
- 2018-19: 41 projects



- College of Arts and Letters
- College of Natural and Health Sciences
- College of Business
- College of Social Sciences, Mathematics and Education



# Including Internships

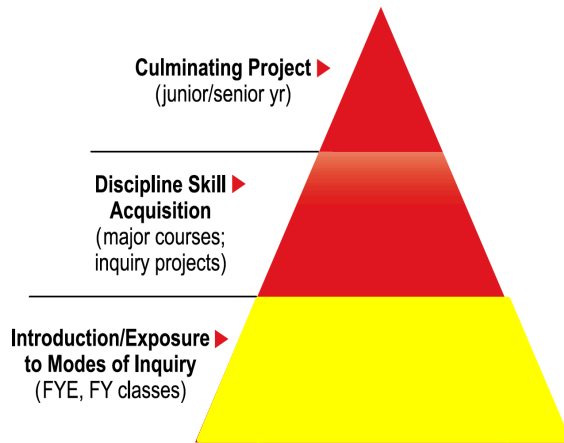


## Applied Learning Experience

- Multidisciplinary Team-based Internships.
- Focused on a questions or problem proposed by local organization.
- Teams of 3-4 students with faculty committee from each major represented.
- Pilot internships will be done this spring with four teams.



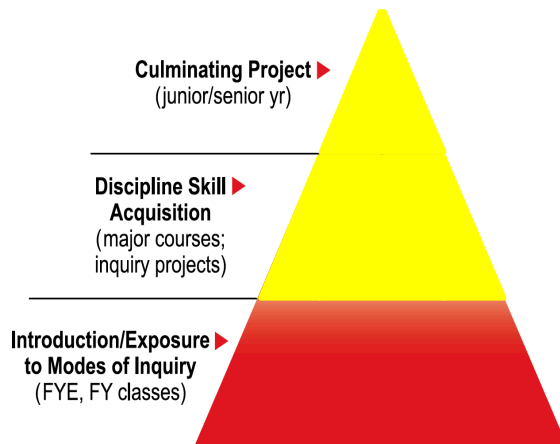
# First-Year Assessment Tools



- Written Communication: Value Rubrics calibrated for our campus
- Oral Communication: Value Rubrics calibrated for our campus
- Critical Thinking: Scale of Intellectual Development based on Perry's Model



# Upper Level Assessment Tools



- Written Communication: Value Rubrics calibrated for our campus
- Oral Communication: Value Rubrics calibrated for our campus
- Critical Thinking: Scale of Intellectual Development based on Perry's Model
- ETS Major Field Test: Impact of Number of Inquiry Courses



## Scale of Intellectual Development: Perry's Model

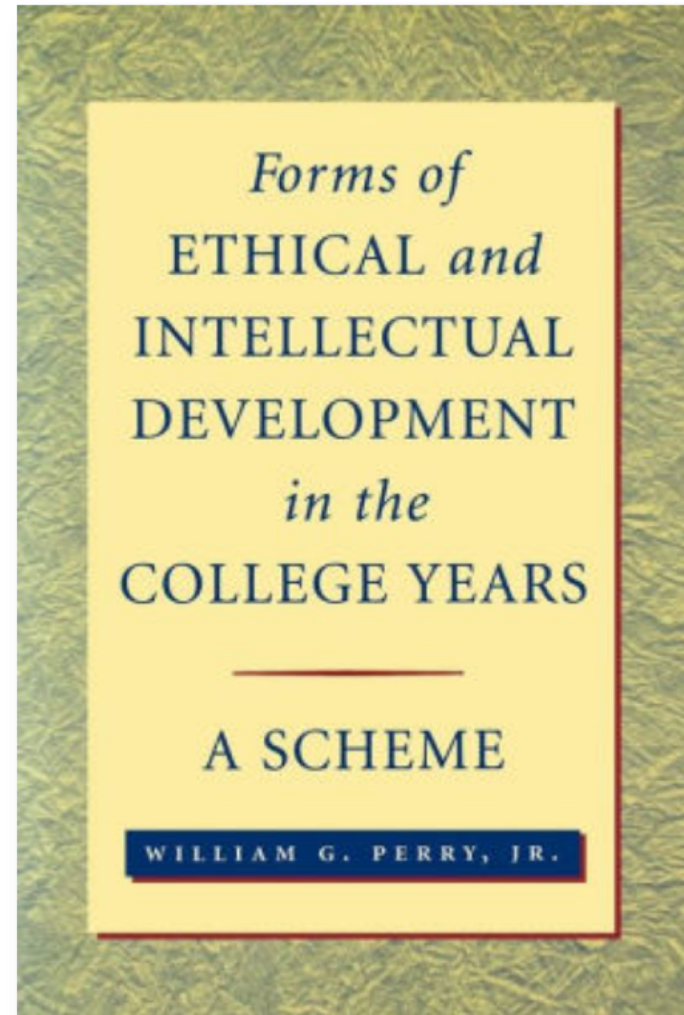
- “Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.” - AAC&U Value Rubric
- Scale of Intellectual Development measures cognitive growth and critical thinking in action.
  - Developed by Dary Erwin at James Madison University
  - 115 Likert scale items (20 min to take)
  - Dualism: Max score = 160
  - Relativism: Max score = 110
  - Commitment: Max score = 160
  - Empathy: Max score = 110
- UT student data meet reliability and validity standards.





## Scale of Intellectual Development: Perry's Model

- William Perry: *Cognitive and ethical growth: the making of meaning*
- Based on the theory that cognitive growth is accompanied by the ability to decenter and view the world from other perspectives.
- Viewed as increasingly complex maturational milestones.



## Scale of Intellectual Development: Perry's Model

- **Dualism:** the world is black or white, right/wrong, good/bad dichotomies.
  - Early Dualism: The truth is out there, authorities know the truth. Just tell me the right answer, don't give me theories.
  - Middle Dualism: Limited diversity – authorities give us problems to learn on our own, BUT we continue to rely heavily on authority for answers.
  - Late Dualism: Truths remain unknown even to authorities.



## Scale of Intellectual Development: Perry's Model

- ***Multiplicity***: Diversity of opinion recognized as legitimate where right answers are not known
  - Early Multiplicity: Shift from certainty to uncertainty – when authorities fail, everyone has a right to an opinion.
  - Middle Multiplicity: In some courses authorities aren't asking for right answers. They want us to think and support opinion with data.
  - Late Multiplicity: Knowledge is relative and contextual. Theories are not truths but metaphors to interpret data.



## Scale of Intellectual Development: Perry's Model

- **Relativism:** Diversity of opinion where values and judgment derive from coherent sources
  - Early Relativism: The world is infinite in context and choice. Personal decisions must be made and supported.
- **Commitment:** Affirmation, choice, or decision with agency residing within the individual
  - Early Commitment: Emergence of additional choice in the implementation of initial commitment. Things become contradictory and dilemmas may seem illogical.
  - Final Commitment: Integration of commitments. Must hold to values while respecting others.



## Scale of Intellectual Development: Findings so far...

FYE Students in Inquiry Sections

SID Subscale	Correlation with Grade in BACC
Dualism I	.301**
Dualism II	.219*
Relativism I	.214*
Relativism II	.175
Commitment I	-.254**
Commitment II	-.272**
Empathy I	.201*
Empathy II	.109



## Scale of Intellectual Development: Findings so far...

Students in Major-level Inquiry Courses

SID Subscale	Mean Scores
Dualism Post: First-Year	86
Dualism Post: Major	83
Relativism Post: First-Year	55
Relativism Post: Major	57
Commitment Post: First-Year	72
Commitment Post: Major	98***
Empathy Post: First-Year	43
Empathy Post: Major	69***



## Caveats to our current assessment data

- Students in non-inquiry FYE courses were not given survey
  - *WHAT!?* No control group!
  - Current year we are surveying all students in FYE with SID.
- Students have not shown significant changes in their SID scores through one class.
  - True for both FYE and Majors-level courses.
  - One semester too short to see a difference in critical thinking?



# The Future of Inquiry at UT

- How to make these changes sustainable?
  - FYE is being revised
    - Exploring moving to a three credit hour course that will allow for inquiry-based components to be expanded.
    - Integration of community-based research and service learning is also being explored for these courses.
- Expand the number of Inquiry-based Majors-level courses
  - Creating Research Tracks or Concentrations in some Majors
    - Majors that impact the most students and have had the highest levels of faculty participation in the QEP thus far
- Potential creation of an Experiential Learning Requirement
  - Highly aligned with the mission of the university
  - Study-abroad, Leadership, Internships, Service Learning, Undergraduate Research





Thank you!

FAU OURI

Dr. Donna Chamely-

WATKINS



Samantha Sexton



OFFICE OF UNDERGRADUATE  
RESEARCH AND INQUIRY

Organizers of the  
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